RECLAMATION

Managing Water in the West

Milk River Project Operations

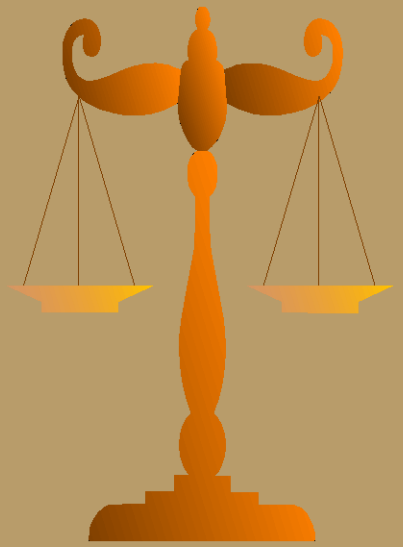
February 18, 2014

U.S. Department of the Interior
Bureau of Reclamation

Authorization

- In 1902, congress authorized the Secretary of the Interior to construct projects to provide water for irrigation.
- In 1903, the Secretary of the Interior authorized Reclamation to construct the Milk River Project as a single-purpose irrigation project.
- Fresno was constructed (through funds with the National Industrial Recovery Act in August of 1935) as a single purpose project to provide storage for the irrigation of project lands by the Reclamation Act of 1902.
  - A flood control provision was added June 4, 1957 (33,700 acre feet)

OPERATIONS - A BALANCING ACT AMONG THE COMPETING INTERESTS



RECLAMATION

Coordination of the St. Mary River & Milk River Reservoir Operations

- Bureau of Reclamation
- Montana Fish, Wildlife, & Parks
- Corps of Engineers
- International Joint Commission
- United States Geological Survey
- Water Survey of Canada
- Blackfeet Tribe Game and Fish
- Milk River Joint Board of Control (MRJBC)
- National Weather Service
- Natural Resources Conservation Service

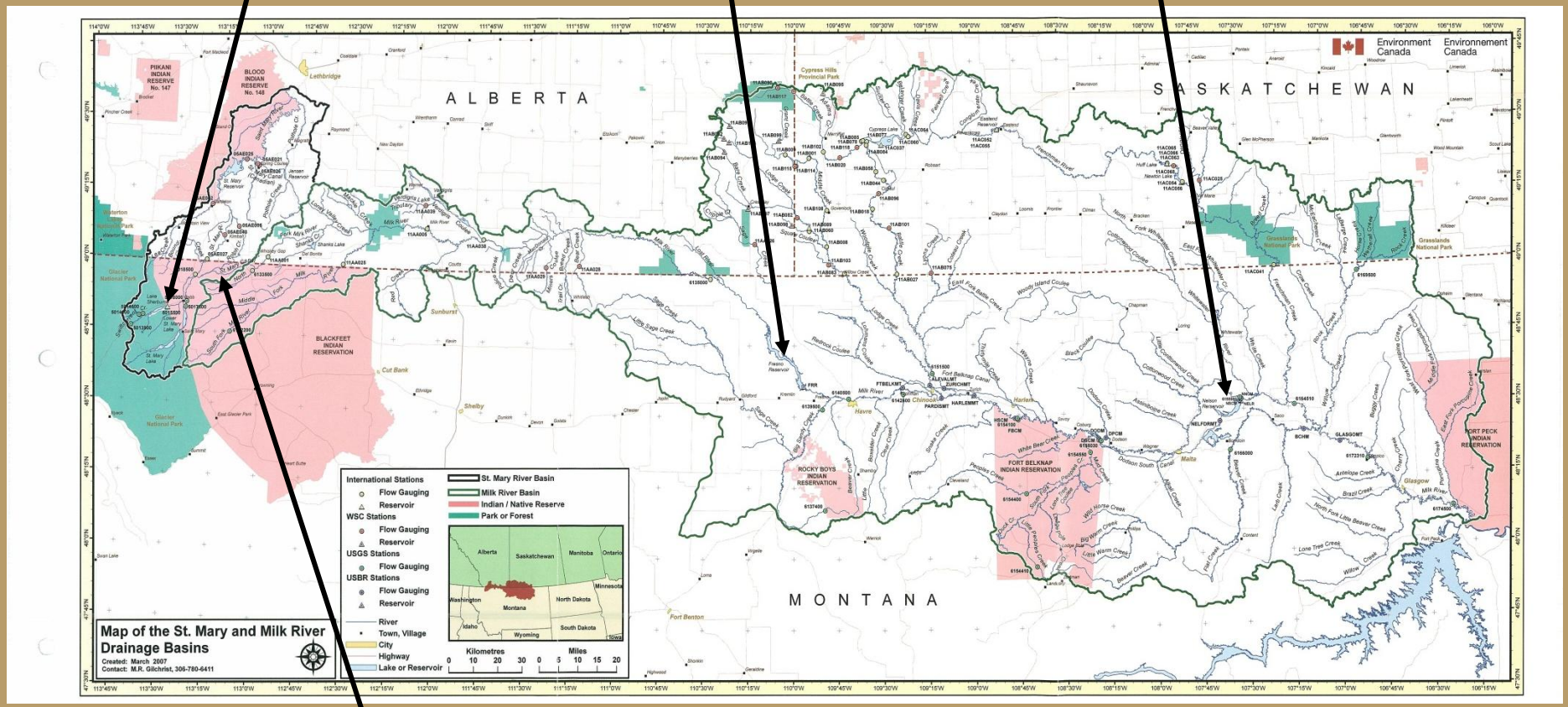
RECLAMATION

St. Mary & Milk River Basins
Major Features

Lake Sherburne

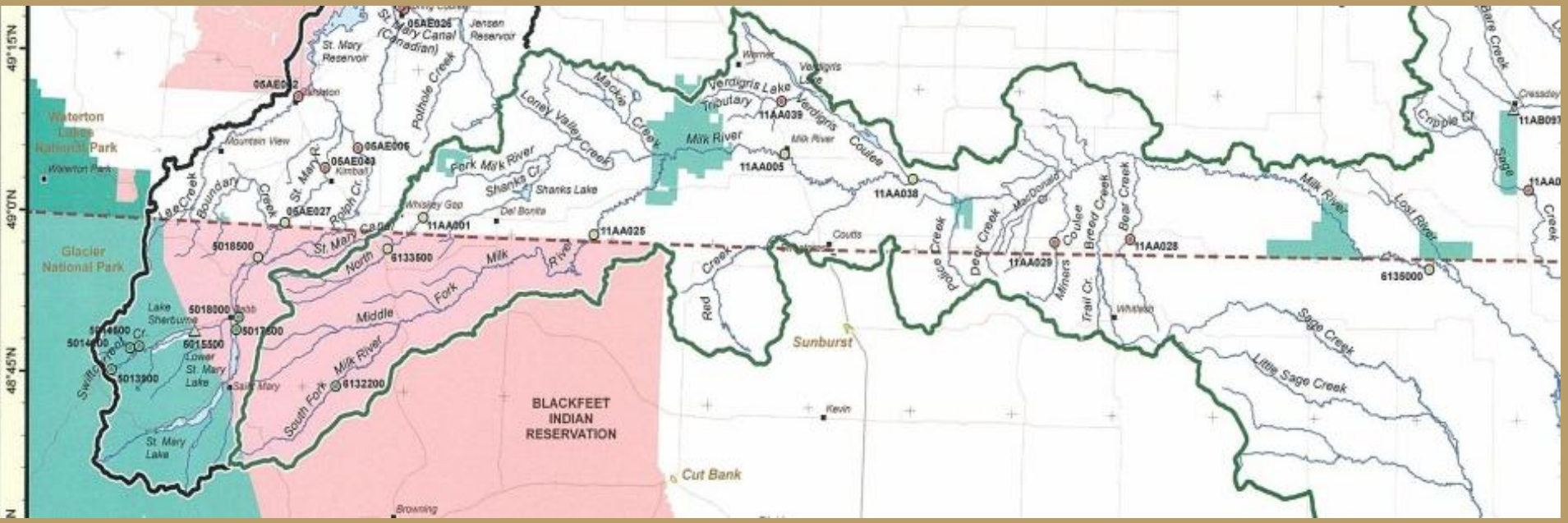
Fresno Reservoir

Nelson Reservoir



St. Mary Canal

RECLAMATION



RECLAMATION

Sherburne Reservoir

- On Swiftcurrent Creek 6 miles west of Babb in Glacier National Park
- Total Capacity 68,080 acre-feet
- Surface Area 1,718 acre-feet
- Spillway Elevation 4788.0
- Outlet Works Capacity 2,100 cfs
- Spillway Capacity 4,000 cfs

RECLAMATION

Fresno Reservoir

- Located 15 miles upstream of Havre
- Storage Capacity 91,746 acre/feet
- Spillway Capacity 51,000 cfs
- Outlet Works Capacity – 2,600 cfs

RECLAMATION

Nelson Reservoir

Located 19 miles northeast of Malta

Water Storage 78,950 acre-feet

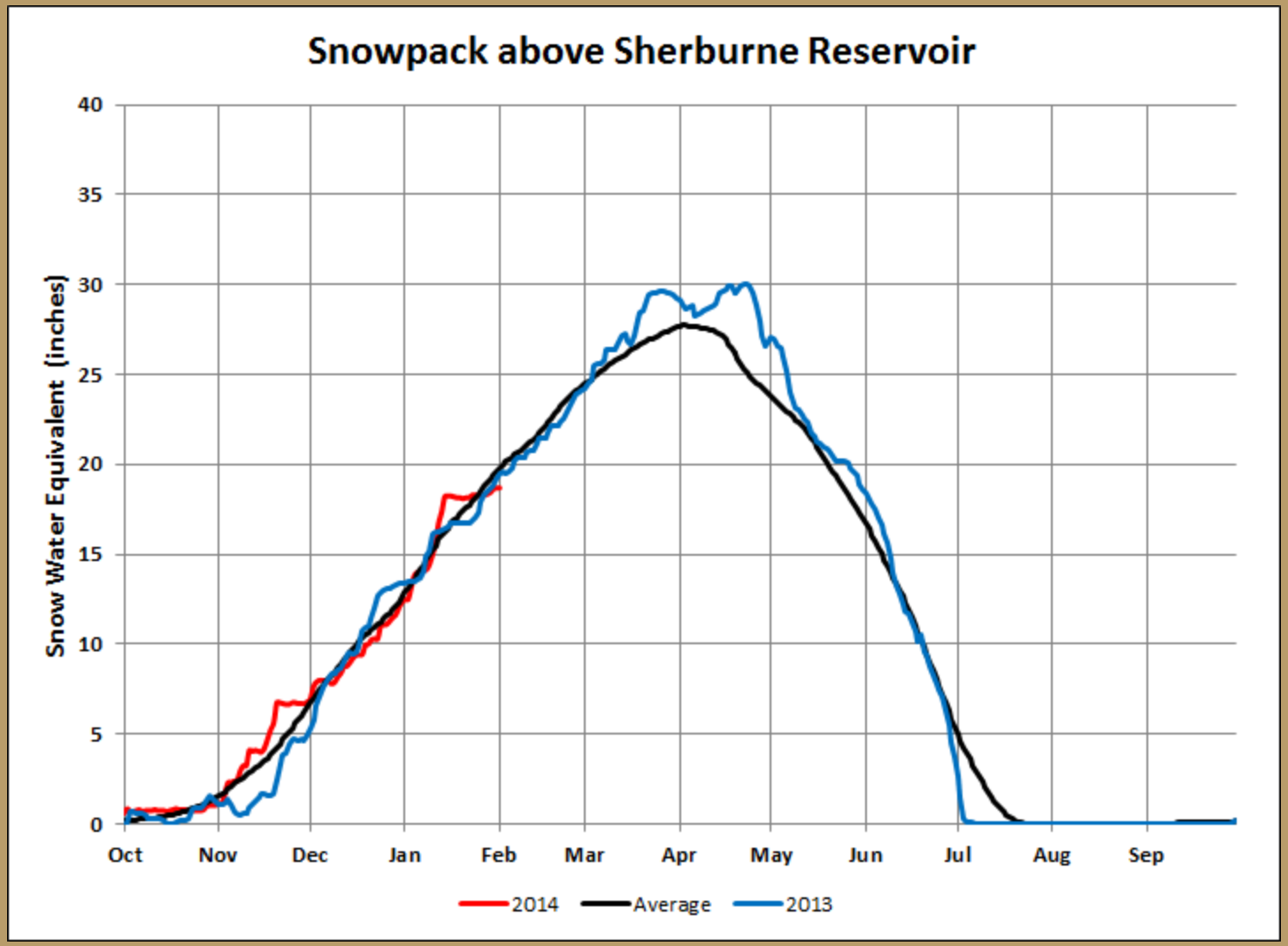
South Canal Capacity – 250 cfs

North Canal Capacity – 550 cfs

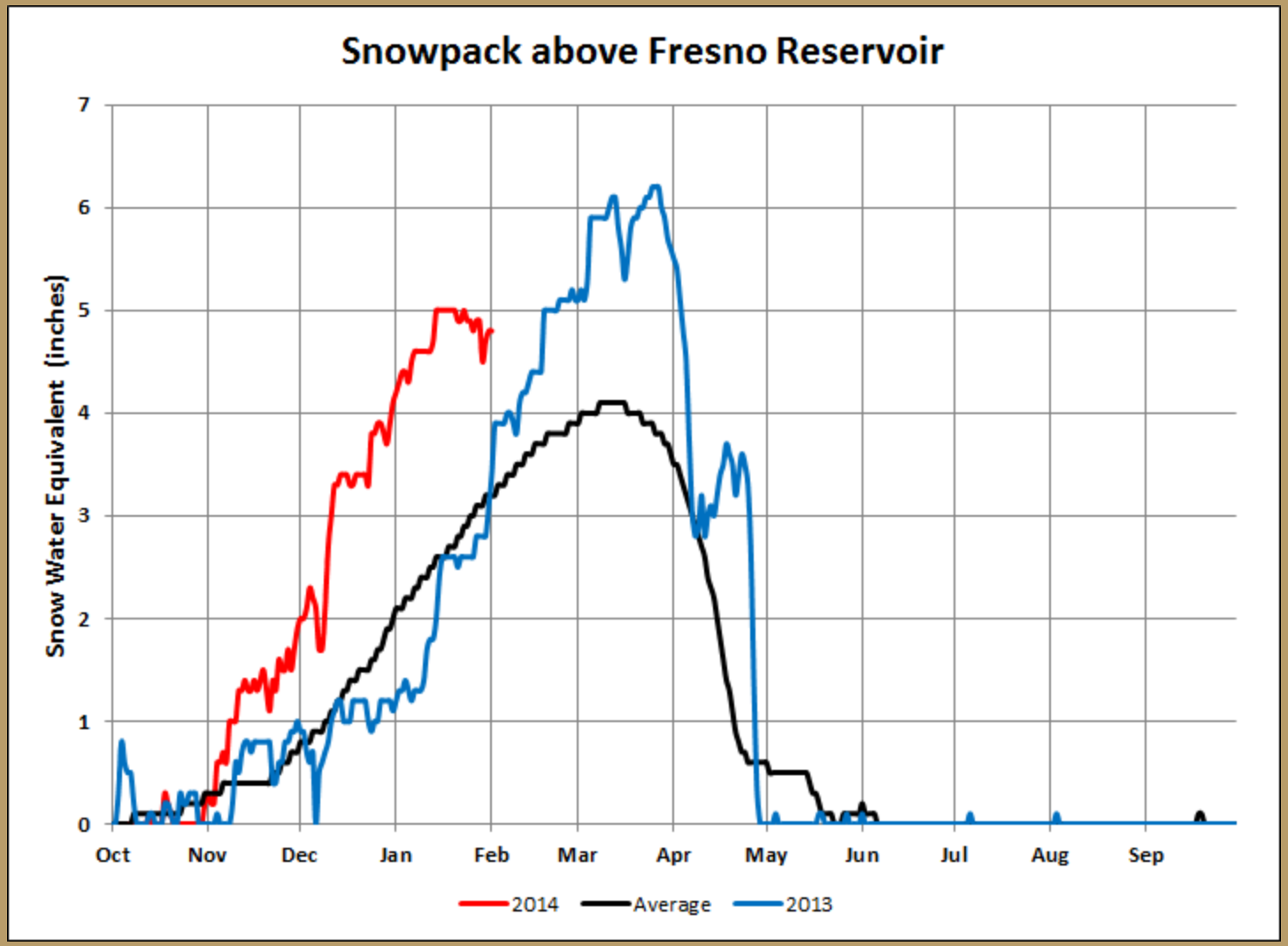
RECLAMATION

The Montana Area Office monitors hydrologic and climatic conditions, prepares inflow projections and operation plans for Lake Sherburne, Fresno and Nelson Reservoirs.

RECLAMATION



RECLAMATION



RECLAMATION

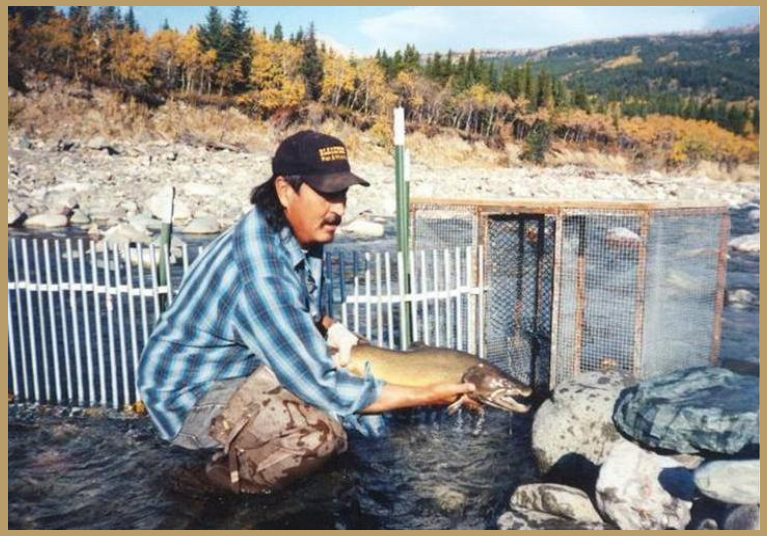
Operating Plans

- Monthly, three annual operating plans are prepared (min, max, and avg.)
- From January until June, these plans are modified to include April-July runoff forecasts from the NRCS.
- When modeling the Milk River Project, the forecasted runoff volume is utilized in conjunction with the operating criteria to maximize the water supply for Project purposes.
- Used to determine St. Mary Canal Diversions, future storage levels.

Sherburne/St. Mary Diversion

- Water releases in the spring are based on canal diversion needs or flood control considerations. Typically fill by the end of June.
- Following spring runoff, releases are scheduled to meet diversion needs.
- Typically begin diverting water in April
- May be as early as March if expected runoff is low and Fresno/Nelson levels are low.

Bull Trout



- Threatened Species
- In St. Mary Basin
- Issues Include
  - Entrainment
  - Fish Passage
  - Winter Flows

RECLAMATION

Fresno Reservoir

- Following irrigation season (usually ends in Sept.), Fresno storage is evaluated and water in excess of 50,000 acre-feet may be transferred to Nelson Reservoir.
- If water cannot be transferred to Nelson, then water released from Fresno is planned so storage does not exceed elevation 2567 ft (approx. 60,000 acre-feet) by March 1. This is to allow storage for flood control and is set by the US Army Corps of Engineers.

Fresno Reservoir

- Minimum releases required to meet contractual obligations is 25 cfs.
- Gate configuration will only allow a minimum release of 40-50 cfs.
- Releases are generally not increased above this rate until the MRJBC elects to begin irrigation deliveries or move water to Nelson.
- Reclamation will increase releases as necessary based on actual or forecasted hydrologic conditions.

Fresno Reservoir

- The MRJBC's role is to set the irrigation allotments and provide a start and end date to the irrigation season.
- Reclamation is responsible for public safety and the integrity of the structures.

Fresno Reservoir

- Releases during peak runoff are set to minimize flooding downstream and maintain storage at or below elevation 2575 ft (normal full pool). [April/May]
- Following peak runoff and after reservoir level falls below full pool, releases are set to satisfy irrigation demands. (1200-1500 cfs)

Fresno Reservoir

- Reservoir levels are to be maintained at no less than 15,000 to 18,000 acre-feet to provide winter releases through the next runoff.
- If water is available in the St. Mary Basin to replenish Fresno Reservoir storage prior to the fall shutdown of the St. Mary Canal, then Fresno storage may be reduced to 8,000-9,000 acre-feet. This situation could occur in August.

Other Fresno Storage Factors

- The Fort Belknap Indian Irrigation Project (near Harlem) has senior water rights on the Milk River.
  - 125 cfs of natural flow
  - 1/7 of the Milk River stored in Fresno
- Bowdoin National Wildlife Refuge receives 3500 acre-feet in accordance with the 1936 MOU.
  - Generally diverts water March-May or Sept.

Other Fresno Storage Factors

- Total Storage Loss to Sediment
  - 1978: 25,110 acre-feet
  - 1999: 36,210 acre-feet
  - 2010: 37,344 acre-feet

Nelson Dikes

- Following irrigation season (usually ends in Sept.), Fresno storage is evaluated and water in excess of 50,000 acre-feet is transferred to Nelson Reservoir.
- Following the fall water transfer, water levels at Nelson decrease by approximately 1,800 acre-feet per month due to seepage
- The volume of water moved to Nelson Reservoir in the spring is generally enough to satisfy the irrigation allotment for Malta Irrigation District water users on the Nelson South Canal and half the allotment for Glasgow Irrigation District.

Piping Plover

- Nesting Period
  - Late May to Early August
  - Time of Concern Late May to Mid July
- Nesting Habitat
  - Minimal Habitat Above Elevation 2218
- Monitoring
  - Twice a week when reservoir is below elevation 2218

RECLAMATION

Nelson Dikes

- Reservoir filling is coordinated around Runoff, Precipitation, and nesting of the Piping Plover.
- Currently, peak content is to occur on or prior to May 15. If no plover nesting is identified through field surveys, than Nelson can continue to fill.
- Reclamation funds FWS to monitor nesting activity.

Irrigation Allotments

- Reclamation meets with all of the irrigation districts during the March MRJBC meeting, after water supply forecasts are available and the March operating plans are complete.
  - Determine how much water will be moved to Nelson
  - Determine preliminary water allotments

Irrigation Allotments

- In April the irrigation districts, MRJBC, and Reclamation meet again to discuss:
  - Decide when irrigation releases will begin
  - Finalize the initial water allotment for the irrigation season
- Additional meetings during the summer are often held to firm up plans as the actual water supply more fully develops or if conditions change dramatically after the April water supply forecast.

Summary

- Authorized as a single purpose irrigation project.
- Very large and complex system that can be affected by uncontrolled factors.
- Efficiently utilize water that is not stored and conserve water when possible.